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Family Name						
Given Names						
Student Number						
Teaching Period	Semester 1, 2018					

FINAL EXAMINATION	DURATION
BIS551 – Business Intelligence and Data Mining	
	Reading Time: 10 minutes
	Writing Time: 120 minutes

INSTRUCTIONS TO CANDIDATES

This Exam has ONE section: (total 100 marks)

You have to answer all questions

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.

This is an RESTRICTED OPEN BOOK examination (Only the unit text book is permitted)

No calculators are permitted

One A4 Sheet of handwritten double-sided notes

No dictionaries are permitted

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
N/A	1 x 16 Page Book

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

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Answer all Questions (100 Marks)

- 1) In no more than 10 lines, give a description of your semester project. Discuss in details the aims, objectives and the methodology which you have followed in your project by giving an example of a real life situation. (15 marks)
- 2) More data, coming in faster and requiring immediate conversion into decisions, means that organizations are confronting the need for real-time data warehousing (RDW). Discuss the differences between RDW and Traditional Data Warehousing. (10 marks)
- 3) In your opinion, is data mining always a necessary process for BI? Discuss and defend your answer by giving an example. (15 marks)
- 4) The terrorist attack on the World Trade Center on September 11, 2001, underlined the importance of open source intelligence. The USA PATRIOT ACT and the creation of the U.S Department of Homeland Security (DHS) heralded the potential application of information technology and data mining techniques to detect money laundering and other forms of terrorist financing. Law enforcement agencies have been focusing on money laundering activities via normal transactions through banks and other financial service organizations. Law enforcement agencies are now focusing on international trade pricing as a terrorism funding tool. International trade has been used by money launderers to move money silently out of country without attracting government attention. This transfer is achieved by overvaluing imports and undervaluing exports. For example, a domestic importer and foreign exporter could form a partnership and overvalue imports, thereby transferring money from the home country, resulting in crimes related to customs fraud, income tax evasion, and money laundering. The foreign export could be a member of a terrorist organization. Data mining techniques focus on analysis of data on import and export transactions from U.S Department of Commerce and commerce-related entities. Import prices that exceed the upper quartile import prices and export prices that are lower than the lower export prices are tracked. The focus is on abnormal transfer prices between corporations that may result in shifting taxable income and taxes out of the U.S. an observed price deviation may be related to income tax avoidance/evasion, money laundering, or terrorist financing. The observed price deviation may also be due to an error in the U.S trade database. Data mining will result in efficient evaluation of data, which, in turn, will aid in the fight against terrorism. The application of information technology and data mining techniques to financial transactions can contribute to better intelligence information (Source: Business Intelligence, a managerial approach) (30 marks)
 - 1- Critically analyze the application of Data Mining to be used against terrorism ? (10 marks)
 - 2- In your opinion, how data mining can be used to fight terrorism beyond what is covered in the case. (10 marks)
 - 3- Do you think data mining, while essential for fighting terrorist cells, also jeopardizes individual's rights of privacy? (10 marks)

- 5) Founded in 1960, the Dallas Cowboys are professional American football team headquartered in Irving, Texas. The team has a large national following, which is perhaps best represented by their NFL record for number of consecutive games at sold-out stadium.

CHALLENGE

Bill Priakos, COO of the Dallas Cowboys Merchandising Division, and his team needed more visibility into their data so they could run in more profitability. Microsoft was selected as the baseline platform for this upgrade as well as a number of other sales, logistics, and commerce applications. The Cowboys expected that this new information architecture would provide the needed analytics and reporting. Unfortunately, this was not the case, and the search began for a robust dash boarding, analytics, and reporting tool to fill the gap.

SOLUTION AND RESULTS

Tableau and Teknion together provided real-time reporting and dashboard capabilities that

exceeded the Cowboys' requirements. Systematically and methodically the Teknion team worked side by side with data owners and data users within the Dallas Cowboys to deliver all required functionality, on time and under budget. "Early in the process, we were able to get a more profitable operation for the Cowboys", said Teknion Vice President Bill Luisi. "This process step is a key step in Tenion's approach with any client, and it always pays huge dividends as the implementation plan progresses." Added Luisi, "of course, Tableau worked very closely with us and the Cowboys during the entire project. Together, we made sure that the Cowboys could achieve their reporting and analytical goals in record time."

Now, for the first time, the Dallas Cowboys are able to monitor their complete merchandising activities from manufacturer to end customer and see not only what is happening across the life cycle, but drill down even further into why it is happening.

Today, this BI solution is used to report and analyze the business activities of the Merchandising Division, which is responsible for all of the Dallas Cowboys' brand sales. Industry estimates say that the Cowboys generate 20% of all NFL merchandise sales, which reflects the fact that they are the most recognized sports franchise in the world.

According to Eric Lai, a ComputerWorld reporter, Tony Romo and the rest of the Dallas Cowboys may have been only average on the football field in the last few years, but off the field, especially in the merchandising arena, they remain America's team. (30 marks)

- 1- How did the Dallas Cowboys use information visualization? Discuss their decision in the use of Information Visualization and report on what else can be added (15 marks)
- 2- Discuss challenges faced, the proposed solution, and the results. (15 marks)

END OF EXAM